DOCUMENT RESUME

ED 064 808 24 EA 004 497

AUTHOR	Kreitlow, Burton W.
TITLE	Evaluating the Influence of Change Agent Teams on the Order of Change Processes of School Systems: A Test of the Model for Educational Improvement. A Report.
INSTITUTION	Wisconsin Univ., Madison. Research and Development Center for Cognitive Learning.
SPONS AGENCY	National Center for Educational Research and Development (DHEW/OE), Washington, D.C.
REPORT NO	TR-214
BUREAU NO	BR-5-0216
PUB DATE	Feb 72
CONTRACT	OEC-5-10-154
NOTE	27p.; Report from the project on Models for Effecting Planned Educational Change
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Administrative Personnel; *Change Agents; *Educational Change; *Educational Improvement; Educational Innovation; Educational Research; *Models
IDENTIFIERS	*Change Agent Teams

ABSTRACT

Project objectives aim at developing and testing organizations that facilitate research and development activities in the schools; and at developing and testing the effectiveness of the means whereby schools select, introduce, and utilize the results of research and development. The Model for Educational Improvement is a theoretical construct that combines some well-known elements of the change process in a new configuration. The model deals with both the external factors and the internal structure of a school system and demonstrates the route through which an innovation moves toward adoption. This part of the investigation deals with school systems using change agent teams as a vehicle for educational improvement and compares them to other school systems without such teams. Findings revealed little evidence that the presence of change agent teams made any difference in perception, emphasis, responsibility, or influence in relation to the improvement process in a school system. Of special concern was the ancillary finding that school staffs have limited knowledge of the process of adoption in their own school system. This finding was identified as the "level of ignorance" and showed that from 32-73 percent of the staff knew little of the process by which a major innovation was adopted in their own school system. (Author)

ED 064808

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Technical Report No. 214

EVALUATING THE INFLUENCE OF CHANGE AGENT TEAMS ON THE ORDER OF CHANGE PROCESSES OF SCHOOL SYSTEMS: A TEST OF THE MODEL FOR EDUCATIONAL IMPROVEMENT

by
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Report from the Project on
Models for Effecting Planned Educational Change

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February, 1972

Published by the Wisconsin Research and Development Center for Cognitive Learning, supported in part as a research and development center by funds from the United States Office of Education, Department of Health, Education, and Welfare. The opinions expressed herein do not necessarily reflect the position or policy of the Office of Education and no official endorsement by the Office of Education should be inferred.

Center No. C-03 / Contract OE 5-10-154

Statement of Focus

The Wisconsin Research and Development Center for Cognitive Learning focuses on contributing to a better understanding of cognitive learning by children and youth and to the improvement of related educational practices. The strategy for research and development is comprehensive. It includes basic research to generate new knowledge about the conditions and processes of learning and about the processes of instruction, and the subsequent development of research-based instructional materials, many of which are designed for use by teachers and others for use by students. These materials are tested and refined in school settings. Throughout these operations behavioral scientists, curriculum experts, academic scholars, and school people interact, insuring that the results of Center activities are based soundly on knowledge of subject matter and cognitive learning and that they are applied to the improvement of educational practice.

This Technical Report is from the Models for Effecting Planned Educational Change Project in Program 3. General objectives of the Program are to develop and test organizations that facilitate research and development activities in the schools and to develop and test the effectiveness of the means whereby schools select, introduce, and utilize the results of research and development. Contributing to these Program objectives, the main objective of the Planned Change Project is to develop and test system-wide mechanisms which local school systems can employ in utilizing knowledge and innovations of the type generated by the Center. Change agent teams have been organized in area school systems and their effectiveness is being evaluated.

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Abstract

The Model for Educational Improvement is a theoretical construct which combines some well-known elements of the change process in a new configuration. The model was developed as a result of an exploratory investigation within the Planned Change Project; it deals with both external factors and the internal structure of a school system and demonstrates the route through which an innovation moves toward adoption. Key ingredients of the model are the external structure composed of research, development, diffusion, and adoption; an improvement module; and both an external and internal source of innovative ideas. This part of the investigation deals with school systems using change agent teams as a vehicle for educational improvement and compares them to other school systems without such teams.

Four propositions are examined regarding systems with and without change agent teams. These propositions are stated as null hypotheses dealing with (a) perception of the stages of the adoption process, (b) emphasis placed on these stages, (c) distribution of responsibility in the adoption process, and (d) influence exercised by key groups in the adoption process.

Findings revealed little evidence that the presence of change agent teams made any difference in perception, emphasis, responsibility, or influence in relation to the improvement process in a school system. Of special concern was the ancillary finding that school staffs have limited knowledge of the process of adoption in their own school system. This was identified as the "level of ignorance" and showed that from 32% to 73% of the staff knew little of the process by which a major innovation was adopted in their own school system.

I
Background

The main objective of the Planned Change Project of the Wisconsin Research and Development Center for Cognitive Learning is to develop and test system-wide mechanisms which help schools utilize results of research and development, and to expedite educational improvement. Through the project, it was advocated that change agent teams be used as an effective mechanism for disseminating information and for introducing change in school systems.[1] Change agent teams are comprised of individuals who represent some or all of the key areas of influence in school systems—e.g., administration, teaching staff, school board, community. Members of the team are aware of their authority to act as a force to stimulate change in the school system and of their responsibility to coordinate various efforts to initiate and influence change. Eight school systems agreed to cooperate in this investigation.

The Model for Educational Improvement

The Model for Educational Improvement was developed as part of an exploratory investigation within the Planned Change Project. The Planned Change Project provided the setting in which a secondary objective, refinement and testing, was possible; the model is a construct which combines well-known elements of the change process in a new configuration designed to describe the change process. Its design was influenced through observation of improvement processes in school systems where change agent teams were operating.[2]

The model is an open system in that it provides for ideas to enter from outside and for the system to gain access to resources beyond the school district. Likewise, internal input for improvement can be made by the staff. Within the model are action areas identified as research, development, diffusion, and adoption. The model is based on the assumptions that the school district has, in one form or another, the social machinery necessary for institutional adjustment, that a process occurs within the system which translates purposes, problems, and needs into solutions and action, and that it is possible for ideas to be stalled or permanently lost in the system.

The machinery for institutional adjustment in the model is in the form of a module made up of a working group or groups whose purpose is the improvement of education in the school system. It is at this point (the module) where a collaborative grouping such as a change agent team functions. Within the module it is important to have a free-flowing exchange of ideas among the various and key sources of influence in the school system. The improvement process may be traced through the model. Ideas may originate within the system or be introduced from outside. The action taken on an idea can be directed to any of the four

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[1]Max R. Goodson and Richard Hammes, A Team Designed for School System Changing, Theoretical Paper No. 11 (Madison: Wisconsin R & D Center for Cognitive Learning, 1968).

[2]The structure of the Model for Educational Improvement and an informal test of its validity are described by Burton W. Kreitlow and Teresa MacNeil in An Evaluation of the Model for Educational Improvement as an Analytical Tool for Describing the Change Process, Theoretical Paper No. 18 (Madison: Wisconsin R & D Center for Cognitive Learning, 1969).

action areas (research, development, diffusion, or total adoption). Ideas need not move sequentially through those levels; they may avoid some levels completely (e.g., research) or return to a previous level (e.g., from diffusion back to further development).

II
Purpose and Plan

Three hypotheses were identified by Kreitlow and MacNeil in connection with the Model for Educational Improvement:[3]

1. The Model for Educational Improvement is a valid description of the change process within a school system.

2. The material from tape recordings of change agent team meetings can be coded according to the stages in the Model for Educational Improvement.

3. There are no differences between newly organized change agent committees and standing committees taking on the change agent role in the order of the change process followed by each.

Observations pertaining to the first two of the above hypotheses were reported in an earlier publication of the Research and Development Center.[4] It is the purpose of this paper to report findings relating to Hypothesis 3.

Hypothesis Modification

Hypothesis 3 required modification for two reasons. First, there were limitations in the time available for direct observation of the change process in the schools, and second, tape recordings of committee meetings were too limited a sample of total activity upon which to test the hypothesis. Four propositions were developed as alternatives to the hypothesis. Data to test these propositions were based on perceptions of professional personnel in the school systems. The four propositions were:

1. There is no difference in the perceptions of school personnel regarding attention given to stages of the adoption process of a selected school system innovation in school systems with change agent teams and those without.

2. There is no difference in the emphasis placed on stages of the adoption process for innovations at the building level and those at the system level as perceived by building personnel within each system when systems with and without change agent teams are compared.

3. There is no difference in the distribution of responsibility among key groups involved (principals, teachers, administrators, board of education, community) in the adoption of a selected innovation when systems with and without change agent teams are compared.

4. There is no difference in the influence exercised by key groups (school board, superintendent, principals, teachers, curriculum personnel, community) when systems with and without change agent teams are compared.

It is assumed that systems having change agent teams are more highly committed to decisions for improvement than those where there is no such collaborative mechanism for change. Theory upon which the Model for Educational Improvement is based further asserts that there is a distinctive process through which an idea

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[3] Theoretical Paper No. 18, op. cit., p. 10.

[4] Ibid.

for improvement passes before being adopted by the system. The process includes the previously-mentioned stages of research, development, diffusion, and adoption, and will presumably be facilitated by the presence of a change agent team.

III
Data Collection

Questions designed to obtain information relating to the four stated propositions were included in a larger data-collection package administered by the Planned Change Project of the Research and Development Center during spring, 1969. Eight school systems were the sources of data. Three of the systems (experimental) having change agent teams received inputs of human relations and problem-solving training from R & D Center staff from time to time over a two-year period. Three others were originally invited to install the change agent teams but did not; the remaining two systems were included in the study for data-collection purposes and were not offered the change agent team program.

Questions in the research instrument pertaining to this analysis are from the Innovation Process and Influence sections and are appended to this report (Appendix A and B).

At the request of the project investigators, representatives of the eight school systems identified innovations which were either recently introduced or were in the process of being introduced. One key innovation per school system and one for each school within the respective systems were identified. The questions then were asked in relation to the identified building and system innovations. Respondents were asked to indicate which person or group of persons took responsibility for each of the eight steps in the adoption of the selected system and building innovation (Appendix A). The response choices were: teachers, principals, administrators, board, and community. A total score of nine points was allocated among the five choices in proportion to the degree of responsibility which the respondent perceived each had upon the adoption of the innovation. Additional possible responses were: "Don't Know" and "Don't Think It Was Done."

Each of the eight questions about the adoption of a system or building innovation represented either the research, development, or diffusion stage of the adoption process. For example, Items 1, 2, and 6 correspond to the research stage; Items 4, 5, and 8 to the development stage; and Items 3 and 7 are aspects of the diffusion stage (Appendix A).

Questions within the Influence section (Appendix B) referred not to particular innovations but to overall influence in determining educational matters in the respondent's school building. Respondents were asked to rate each of ten potential influence entities on a five-point scale ranging from "none" to "a great deal" of influence.

Both instruments, Innovation Process and Influence, were administered to a 30% sample of the total professional personnel in each of the eight participating school systems. The systems that received inputs from the Planned Change Project are called the change agent team (CAT) systems.

IV
Data Analysis

Responsibility for Innovation

Responses given by the school personnel sample were analyzed for each possible response, i.e., rating the extent to which each process received attention from teachers, principals, administrators, board, and community: this included the proportion indicating "Don't Know" or "Don't Think It Was Done." For the purpose of validating the model it was necessary to know whether attention was given to the stages of adoption and to know who took responsibility for the respective tasks. Attention here was directed toward determining school personnel perception of attention to the stages. The "Don't Know" response was selected here as the indicator of respondent's lack of knowledge about who took responsibility for steps of the adoption process of a selected system or building innovation. The response "Don't Think It Was Done" was not used for this analysis because it was given by a consistently low proportion of respondents throughout all systems.

Proposition 1

> There is no difference in the perceptions of school personnel regarding attention given to stages of the adoption process of a selected school system innovation in school systems having change agent teams and those that do not.

Inspection of Table 1 reveals no marked difference between CAT and non-CAT systems in the proportion of school personnel who did not know about attention paid to the respective adoption stages. Within the CAT systems (Systems 1, 2 and 3) are found the highest score and the lowest score for the eight systems; the non-CAT systems have greater homogeneity in their scores. Not knowing whether attention was paid to the respective adoption stages was termed "level of ignorance." It represents from 32% to 73% of the total respondents.

Table 1 also shows that respondents do not indicate marked differences between the stages of research, development, and diffusion; i.e., where the level of ignorance is high for the research stage it is approximately just as high for the development and diffusion stages. On the basis of this absence of important variation or lack of discrimination among the stages, no further distinction between stages will be made in subsequent analyses.

Comparing Pairs of Systems

School systems included in this study were not originally selected on the basis of established criteria which would permit uniform comparison procedures. The decision to have some serve as experimental systems and others as control systems depended upon the extent to which the respective systems had agreed to cooperate. Consequently, in order to pair an experimental with a control system it was necessary to review aspects of all the control systems and determine which ones could most reasonably be paired with which of the three experimental systems. The two chief characteristics selected as the basis for pairing CAT with non-CAT systems were size of system and similarity of selected innovations. Because there were five non-CAT systems and three CAT systems, two of the former necessarily had to be eliminated when the three pairs were selected. The pairs are:

1. System 1 and System 4; the two largest school systems.

Table 1

Summary of "Don't Know" Responses Given by School Personnel Regarding Attention Given to Three Stages of the Adoption Process For Selected System Innovations

ITEM NUMBER	CAT SYSTEMS 1	2	3	NON-CAT SYSTEMS 4	5	6	7	8
1	.692	.228	.371	.493	.359	.639	.351	.476
2	.718	.276	.375	.553	.437	.639	.486	.563
6	.719	.423	.300	.576	.640	.688	.513	.575
$\bar{X}$ R	.719	.309	.349	.540	.479	.655	.450	.538
4	.759	.419	.292	.559	.532	.704	.416	.546
5	.705	.320	.325	.493	.333	.652	.432	.486
8	.756	.423	.200	.544	.500	.694	.513	.513
$\bar{X}$ D	.740	.387	.272	.532	.455	.683	.453	.515
3	.714	.365	.30	.519	.460	.590	.378	.506
7	.753	.362	.39	.565	.578	.754	.621	.616
$\bar{X}$ D	.733	.363	.343	.542	.519	.672	.499	.561
$\bar{X}$ O I	.73	.35	.32	.54	.48	.67	.47	.54

Table 2

A Comparison of "Don't Know" Responses of School Personnel In Pairs of School Systems Regarding Attention Given to Stages of the Adoption Process for Selected System Innovations

ITEM NUMBER	SYSTEM 1	4	2	6	3	7
1	.69	.49	.23	.64	.37	.35
2	.72	.55	.28	.64	.37	.48
6	.75	.58	.42	.69	.30	.51
4	.76	.56	.42	.70	.29	.41
5	.70	.49	.32	.65	.32	.43
8	.76	.54	.42	.69	.20	.51
3	.71	.51	.36	.59	.30	.37
7	.75	.56	.39	.75	.39	.62
$\bar{X}$	.73	.54	.35	.67	.32	.47

2. System 2 and System 6; comparable in size and system innovations.

3. System 3 and System 7; the two smallest school systems, with the same system innovation.

Table 2 illustrates the difference within and between the pairs of school systems with regard to their level of ignorance about the eight items of the Innovation Process section for their respective system innovation.

Generalizations about differences between CAT and non-CAT systems are difficult to make on the basis of the summary data in Table 2. Between the two large-sized systems (Systems 1 and 4), the overall level of ignorance about who attended to steps in the adoption process

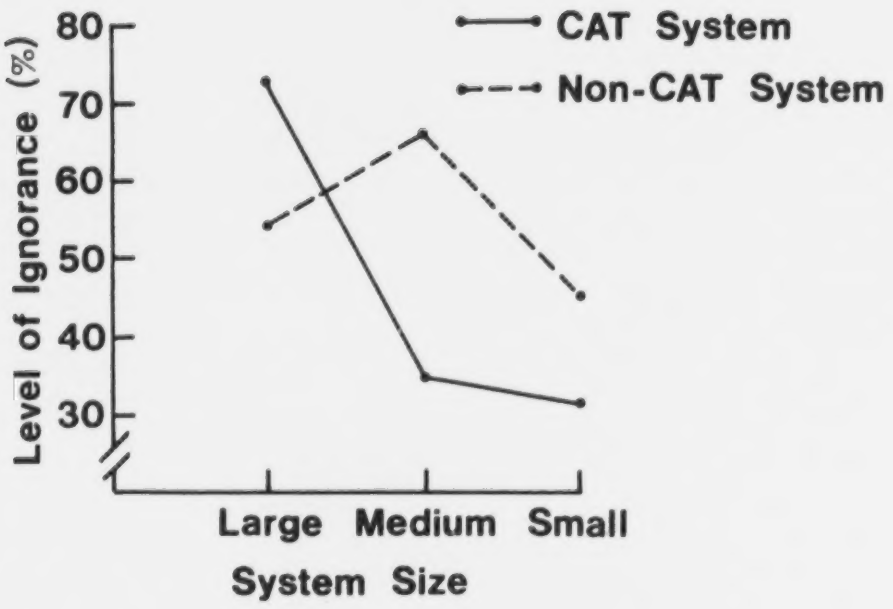

Fig. 1. Comparison of levels of ignorance for pairs of CAT and non-CAT systems.

was much higher in the CAT than in the non-CAT system.

In the medium-sized systems (Systems 2 and 6) the opposite is true, with the level of ignorance in the non-CAT being almost as high as in the large CAT system of the first pair (System 1). The two small systems, which are the most closely matched of the three pairs, show the least spread between CAT and non-CAT system, with the CAT system being the more positive about whether attention was given to the adoption stages.

The presence of a change agent team, system size, and similarities in selected system innovations are unsatisfactory bases for demonstrating systematic differences between respondents' knowledge of the innovation process in pairs of school districts. Figure 1 graphically illustrates the relative position of pairs of CAT and non-CAT systems when compared on the basis of ignorance level, where ignorance level represents the proportion of respondents who do not know about attention given to the adoption process of a system innovation.

As can be seen in Figure 1, deviant cases prevent generalization about direct, positive relationships between the size of system and level of ignorance of the innovation adoption process.

Innovativeness of School System and Level of Ignorance

Three separate procedures were employed to determine the relative innovativeness of the school systems included in the study. The first was a ranking of the innovativeness of each system by a panel of ten experts. The second was a ranking derived from a quantitative accounting of innovations by professional personnel of the school system, excluding the system superintendent. The third was a ranking derived from information supplied through interviews with superintendents of each school system. These three procedures were combined to form a composite ranking of the eight systems in terms of their relative innovativeness.[5]

Table 3 contains a listing of the six paired school systems according to their respective ranking on levels of innovativeness and ignorance.

The three CAT systems are shown in Table 3 to be the three most innovative. Systems 3 and 2 rank highest in innovativeness and lowest in ignorance level. In other words, the two most innovative systems are also those in which personnel indicated the highest amount of knowledge about the adoption process followed for selected innovations. However, this expected relationship between level of innovativeness and level of ignorance does not hold for all systems; System 1, for example, is highest on level of ignorance but is the third most

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[5]Details of the procedures followed for formulating a composite ranking of system innovativeness are described in Leo R. Hilfiker, The Relationship of School System Innovativeness to Selected Dimensions of Interpersonal Behavior in Eight School Systems, Technical Report No. 70 (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1969), pp. 23-25.

Table 3

Comparison of Rankings of School Systems According to Level Of Innovativeness and Level of Ignorance

Level of Innovativeness System Number		Level of Ignorance System Number	
3	(CAT) (Most innovative)	3	(Least ignorant of adoption stages)
2	(CAT)	2	
1	(CAT)	7	
6	(Non-CAT)	4	
4	(Non-CAT)	6	
7	(Non-CAT) (Least innovative)	1	(Most ignorant)

innovative system.

Proposition 1 maintains that there is no difference between systems with and those without change agent teams in the way respondents perceive attention given to the stages of the adoption process of a system innovation. The proposition was upheld when matched pairs of CAT and non-CAT systems were compared. When level of ignorance is compared with level of innovativeness, the expected relationship of a low level of ignorance and high level of innovativeness is only partially supported by the data.

Responsibility for Innovation at System and Building Level

Proposition 2

> There is no difference in the emphasis placed on stages of the adoption process for innovations at the building level and those at the system level as perceived by building personnel within each system when systems with and without change agent teams are compared.

Responses given by school personnel at the building level were analyzed, and again the "Don't Know" response was selected as the indicator of respondents' lack of knowledge about who took responsibility for steps of the adoption process of selected system and building innovations. Table 4 contains a summary of those responses. It is important to note here that no attempt is made to standardize summary statistics within and among school systems. There is a range of two to eight buildings in the eight systems. Because the number of respondents is not the same for each school and the number of schools is not the same for each system, the summaries in Table 4 are to be regarded as rough rather than precise indicators of relative scores.

Inspection of Table 4 reveals that within systems there is no definite pattern of "Don't Know" responses. When knowledge of system innovation is compared with knowledge of building innovation for each system, we find that school personnel in Systems 1, 4 and 6 know less about the adoption of the system innovation than about the building-level innovation. In Systems 2, 3 and 7, respondents know less about the building than about the system innovation. System 3 had the greatest discrepancy in the respondents' knowledge of the two innovation levels. Employing the mean figures at the bottom of Table 4, System 3 had 25% less knowledge of the building innovation than of the system innovation. In terms of Proposition 2, there is no marked difference between systems with change agent teams and those without in the way personnel in each perceive attention given to adoption of system and building innovations.

Distribution of Responsibility for Adoption of Innovation

Proposition 3

> There is no difference in the distribution of responsibility among key groups involved (principals, teachers, administrators, board of education, community) in the adoption of a selected innovation when systems with and without change agent teams are compared.

The instrument dealing with the innovative process (Appendix A) offered response

Table 4

Percentage of Building Personnel Who Do Not Know Who Took Responsibility for Stages of the Adoption Process of Building and Systems Innovations

	SYSTEM											
	1		2		3		4		6		7	
Item	Bldg	Sys	Bldg	Sys	Bldg	Sys	Bldg	Sys	Bldg	Sys	Bldg	Sys
1	.839	.888	.388	.170	.376	.487	.673	.630	.663	.669	.583	.569
2	.515	.712	.618	.377	.713	.072	.696	.646	.055	.264	.601	.587
3	.590	.764	.550	.559	.654	.410	.685	.703	.108	.860		
4	.507	.678	.413	.611			.500	.499	.631	.679		
5	.613	.652	.732	.382			.455	.533	.888	.666		
6	.569	.740	.476	.476			.572	.566	.682	.795		
7	.763	.588	.645	.645			.101	.180				
8	.578	.791										
$\bar{X}$	.621	.726	.546	.460	.581	.323	.526	.536	.504	.655	.592	.578

choices of teachers, principals, administrators, board, and community as the persons or groups who took responsibility for the adoption of a system innovation. Analysis of data relating to Proposition 3 was conducted to determine whether any difference existed between CAT and non-CAT systems in the way respondents viewed the distribution of responsibility among the five groups.

Respondents were asked to rate the degree of responsibility assumed by each of the five groups by assigning a score to each from a total of nine points. Ratings were made in response to questions relating to eight stages of adoption of a selected school system innovation. Respondents who did not rate the five groups had the alternative responses, "Don't Know" or "Don't Think It Was Done." Only the ratings are included in the analysis of data for Proposition 3. The reader should keep in mind that the level of ignorance was over 50% in Systems 1, 4, and 6. "Distribution of responsibility" refers to the value assigned to each of the five groups by raters in CAT and non-CAT systems. An even distribution of responsibility would be true in those systems where each of the groups is assigned approximately the same weight by raters in the system.

Table 5 contains a summary of ratings assigned to each of the five groups for each of six school systems. As was the case with data in Table 4, it is important to note that no attempt is made to standardize summary statistics for this table. The number of raters is not the same for each school, nor is there the same number of schools in each system.

An examination of Table 5 reveals that the six systems do not have similar distributions of responsibility for the adoption of system innovations. Ratings given to "community" are low for all systems. The pattern of rating is not consistent for the other groups.

Arranging CAT and non-CAT systems in pairs, the comparison of distribution of responsibility is presented in Figure 2.

Two of the CAT systems (1 and 2) rate administration responsibility considerably higher than do their paired non-CAT systems. There is no generalizable pattern in the order of rating the five responsible groups. System 4 shows the most even ratings. Table 6 presents the order in which the five groups were ranked in each system.

Proposition 4

> There is no difference in the influence exercised by key groups (school board, superintendent, principals, teachers, curriculum personnel, community) when systems with and without change agent teams are compared.

Questions in the Influence section of the instrument referred to overall influence in determining educational matters in the school rather than to specific innovations (Appendix B). Respondents were asked to rate each of the potential influence groups on a five-point scale ranging from "none" to "a great deal"

Table 5

Mean Rating Scores Assigned to Groups Responsible for Adoption of System Innovation in CAT and Non-CAT Systems

	SYSTEM					
	CAT			NON-CAT		
GROUP	1	2	3	4	6	7
Teachers	2.003	.887	2.519	1.608	2.084	1.184
Principals	2.019	1.276	3.973	3.606	2.609	2.416
Administration	4.071	5.573	1.977	3.396	3.760	4.562
Board	.811	1.023	.541	3.523	.097	.822
Community	.953	.121	.050	.023	.091	.000

Table 6

Ranking of Groups According to Perceived Responsibility for Adoption of System Innovations

	SYSTEM					
RANK	1	4	2	6	3	7
Highest Responsibility	Admin.	Principals	Admin.	Admin.	Principals	Admin.
	Principals	Board	Principals	Principals	Teachers	Principals
	Teachers	Admin.	Board	Teachers	Admin.	Teachers
	Community	Teachers	Teachers	Board	Board	Board
Lowest Responsibility	Board	Community	Community	Community	Community	Community

Table 7

Level of Influence of School Board, Superintendent, Principals, Teachers, Curriculum Personnel, and Community in Determining Educational Matters in Schools as Perceived by Building Personnel in CAT and Non-CAT School Systems

	SYSTEM					
	CAT			NON-CAT		
INFLUENCE GROUP	1	2	3	4	6	7
School Board	2.820	2.529	2.242	2.979	2.616	2.300
Superintendent	3.815	3.542	2.545	2.864	3.202	3.035
Principals	2.670	2.188	1.901	2.447	2.686	2.069
Teachers	2.072	1.694	2.939	1.748	2.383	2.344
Curriculum Personnel	2.357	1.894	1.185	2.608	2.101	2.500
Community	2.087	1.682	1.468	1.397	1.686	1.933

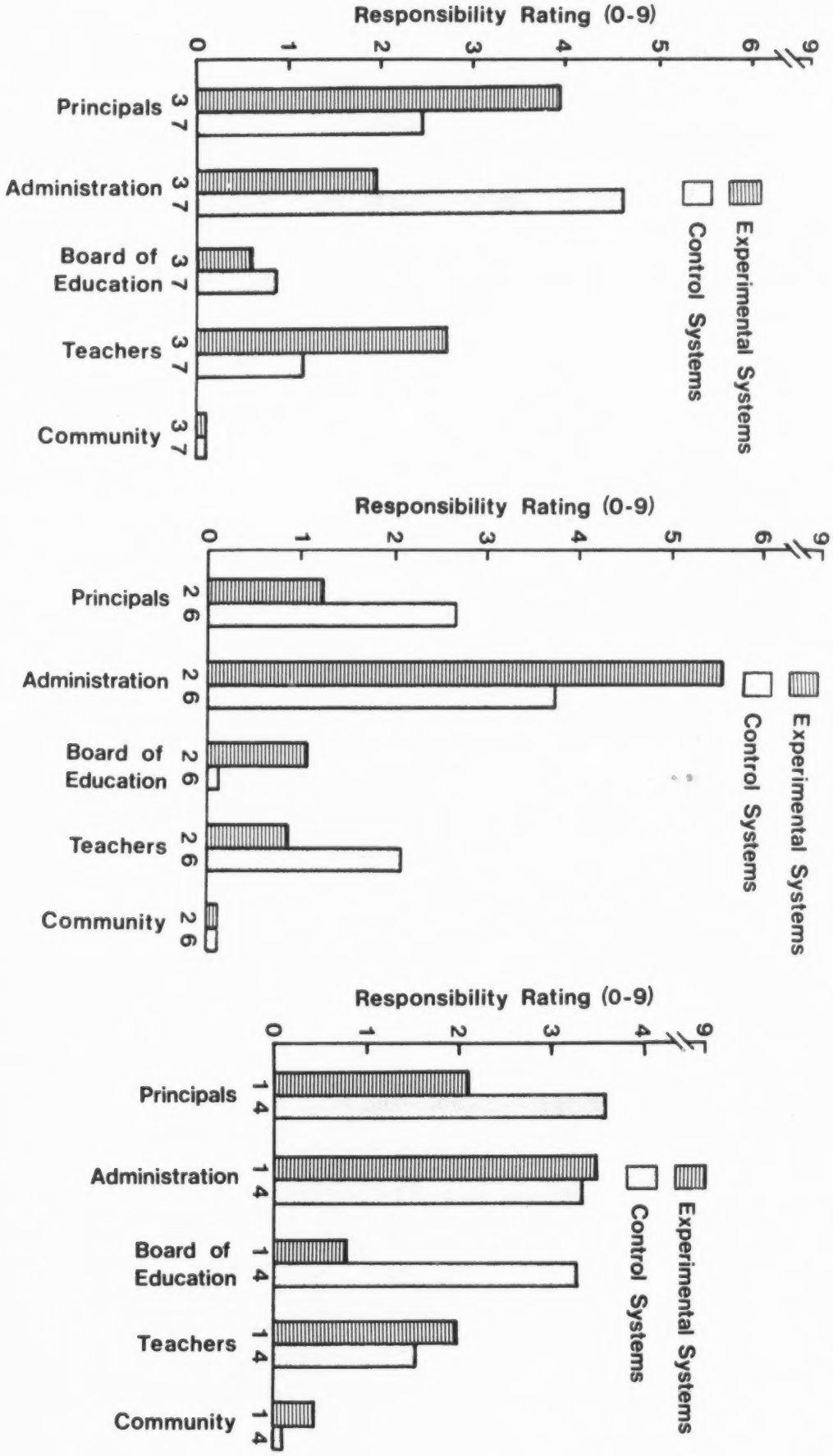

Fig. 2. Comparison of pairs of CAT and non-CAT systems according to respondents' perception of groups assuming responsibility for a system innovation.

Table 8

Ranking of the Level of Influence Between Pairs of
CAT and Non-CAT Systems

RANK	SYSTEM		
	1	2	3
Highest Influence	Superintendent	Superintendent	Teachers
↓	School Board	School Board	Superintendent
	Principal	Principal	School Board
	Curriculum Committee	Curriculum Committee	Principal
Lowest Influence	Community	Teachers	Community
	Teachers	Community	Curriculum Committee
	4	6	7
Highest Influence	School Board	School Board	Superintendent
↓	Superintendent	Superintendent	Teacher
	Curriculum Committee	Curriculum Committee	School Board
	Principal	Principal	Principal
Lowest Influence	Teachers	Teachers	Community
	Community	Community	Curriculum Committee

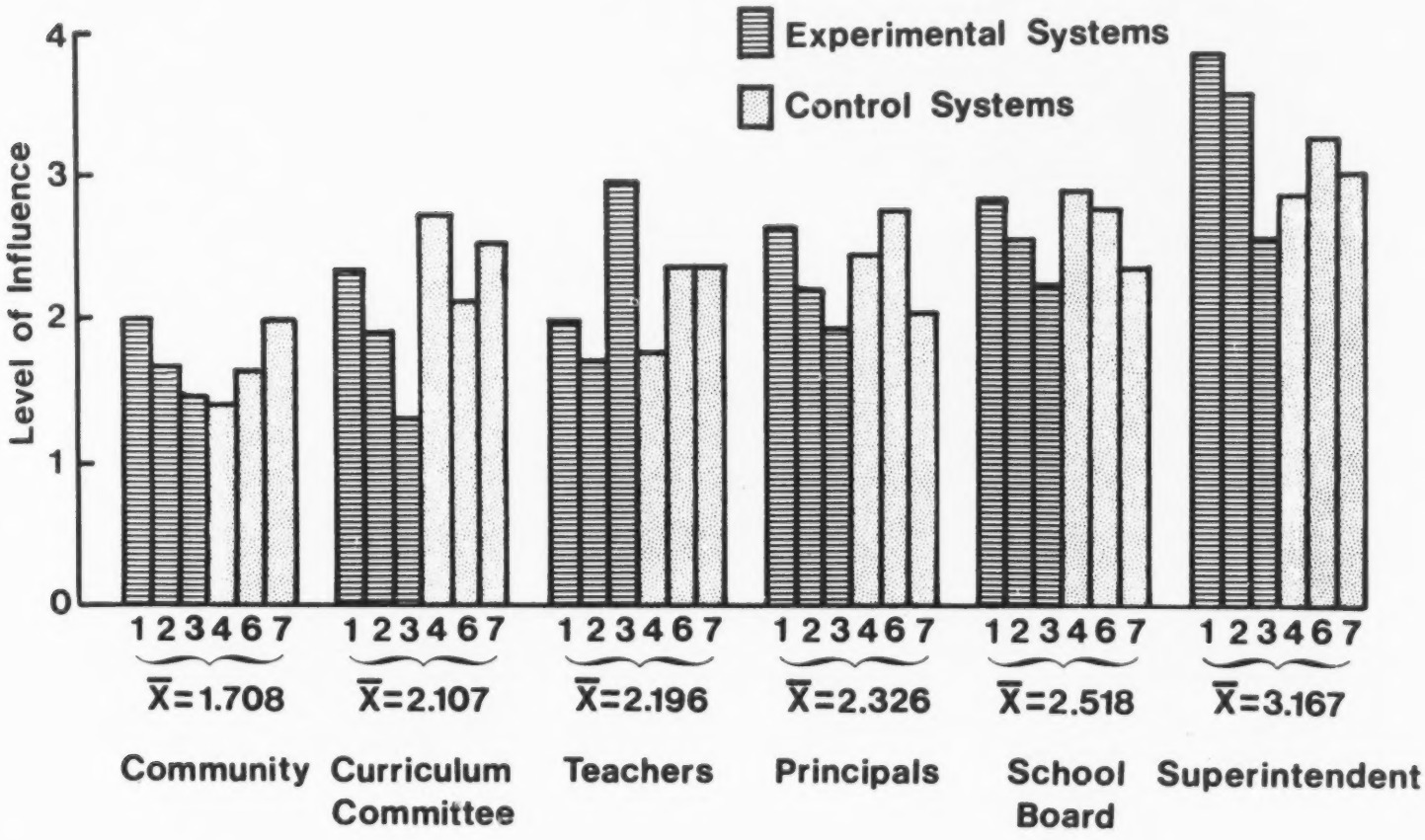

Fig. 3. Level of influence of school board, superintendent, principals, teachers, curriculum personnel and community in determining educational matters.

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of influence. This analysis attends to only six of many potential influence groups. These were selected for their relevance for the Model for Educational Improvement.

Table 7 includes the mean score assigned to each of the six groups for each of six school systems. Scores are assigned by respondents on a five-point scale with four points the maximum level of influence possible.

In Figure 3, the above influence scores are arranged for all systems in increasing order of influential groups, i.e. community being least influential and the superintendent being most influential in determining educational matters.

Disregarding numerical scores, Table 8 lists in descending order of influence the ranked groups for pairs of CAT and non-CAT systems.

Inspection of the lists in Table 8 reveals very little difference in the order of influence patterns between pairs of CAT and non-CAT systems. Systems 1 and 4 have differences in which items are reversed but never by more than one position. Except for the last two items which are identically placed, Systems 2 and 6 follow a pattern similar to that of 1 and 4. Systems 3 and 7 are almost identical in their ranking of the various groups. All of this is to say that, in terms of influence ratings, the pairs of CAT and non-CAT systems are evenly matched. When the three CAT systems are compared, the two larger systems (1 and 2) rank the influence groups the same, but the smaller system (3) deviates by assigning teachers a high level of influence.

Since System 3 is also the system which received the highest innovativeness ranking, it might be suggested that the high influence of teachers combined with administration is a contributing factor to the innovativeness of the system. This speculation does not hold for System 7, which also assigns high influence to teachers, but was ranked as the least innovative of the six systems included in this analysis.

In terms of Proposition 4, then, the data support the claim of no difference between CAT and non-CAT systems in the influence exercised by the key groups.

V
Assessing the Outcome

In the foregoing analysis, attention centered on comparisons of school districts with and without formally organized change agent teams. The exploratory test of four propositions revealed little evidence that the presence of a change agent team makes a difference in the way school personnel perceive the change process in their school systems. The three systems that had change agent teams were rated as more innovative than the other systems included in the study; however, they were rated through a composite system that was not confined to the estimates of school personnel.

In connection with the Model for Educational Improvement, analysis of responses of school personnel revealed that the order of the change process followed was not different when a change agent team was functioning. For example, the model distinguishes between the operations of research, development, diffusion, and adoption of an idea. Respondents did not indicate that they perceived a distinction between these stages. Their knowledge about who took responsibility for research tasks associated with an innovation was usually the same as their knowledge about who took responsibility for diffusion tasks. When the level of knowledge was low for one stage, it was low for all the stages. Theoretically, the presence of a change agent team in a system should have increased the level of awareness of how plans were proceeding toward the installation of an innovation. The data do not support that claim. Also, the Model for Educational Improvement posits that the change agent team permits a more balanced sharing of responsibility for decisions about innovations. That claim is based on the fact that the team as an ongoing mechanism for change includes representatives of key areas of influence within the system. The data do not uphold the claim that responsibility is more evenly distributed in systems where there are change agent teams.

There are several reasons to suspect that these analyses did not constitute a fair test of the Model for Educational Improvement. Observation of change agent teams in action leads us to believe that decisions about proposed changes are very gradually made.[6] The team, for example, may carry out research and development activities toward the adoption of an innovation, but these activities usually encompass many months. Thus the team may be actively aware of the progress being made, but is unlikely to announce its progress until it has made a decision about subsequent action. Consequently, school personnel are generally unaware of what is happening to discussions about the innovation. In this analysis we considered only the responses of the overall school personnel. We suggest that work on the selected innovations was not sufficiently advanced at the time of questioning for school personnel to know details of how progress toward adoption was realized.

The varied sizes of the school systems also confound the task of evaluating the effect of the change agent team on adoption of an innovation. It is reasonable to expect that in small systems school personnel have greater opportunity to know what is happening to a planned change than would be the case in large systems.

The investigators noted while gathering data in the various school systems that in some places there was an established line of communication between the central office and the schools which permitted information about change to be freely circulated. One such system did not have a formally organized change agent team. Yet the effect of open exchange

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[6]Theoretical Paper No. 18, op. cit.

between the various areas of influence within the school system was akin to the ideal proposed for the change agent team. To accurately assess the impact of a formalized mechanism for change, it must be compared with systems which have no organized channels for consideration of innovations by the various segments within the system.

Following are several questions raised by this investigation which, if answered, have potential for making educational improvement a more predictable process which can be both efficiently and democratically achieved:

1. Are there in-system communication patterns that account for the major variations in knowledge of the adoption process among school systems?
2. Why is it that the community rated low in influence in determining educational matters is also rated low in responsibility for adoption of system innovation?
3. Is an informal vehicle for change in school systems any less effective than a formally established change agent team?
4. Is it advantageous to the system for teachers to be aware of the processes of change within the system?

Appendix A
Innovation Process

PLEASE MARK ALL ANSWERS ON ANSWER SHEET

The following innovation has recently been introduced in your system: indicate in your estimation which person or groups of persons took responsibility for each step.

Innovation Process

1. Who analyzed school needs and problems as a basis for considering this innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
2. Who participated in investigating this specific innovation and alternatives?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
3. Who arranged for training teachers in installing and using the innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
4. Who modified elements of the established program to facilitate the operation of the innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
5. Who took responsibility for solving staffing problems?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
6. Who evaluated or planned evaluation of the innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
7. Who worked with outside consultants in exploring and introducing the innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
8. Who modified the innovation to make it work better in the classroom?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE

CENTRAL OFFICE STAFF AND SUPERINTENDENT SKIP THIS SECTION. GO TO SECTION X (SEPARATE BOOKLET) LABELED "INNOVATIONS—SUPERINTENDENT AND CENTRAL OFFICE."

The following innovation has recently been introduced in your building: indicate in your estimation which person or groups of persons took responsibility for each step.

PLEASE MARK ALL ANSWERS ON ANSWER SHEET

Innovation Process

9. Who analyzed school needs and problems as a basis for considering this innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
10. Who participated in investigating this specific innovation and alternatives?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
11. Who arranged for training teachers in installing and using the innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
12. Who modified parts of the established program to facilitate the operation of the innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
13. Who took responsibility for solving staffing problems?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
14. Who evaluated or planned evaluation of the innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
15. Who worked with outside consultants in exploring and introducing the innovation?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE
16. Who modified the innovation to make it work better in the classroom?	Te Pr Ad Br Co = 9	DON'T KNOW	DON'T THINK IT WAS DONE

TEACHERS STOP HERE. PRINCIPALS AND CENTRAL OFFICE STAFF GO ON TO SECTION X (SEPARATE BOOKLET) USING ANSWER SHEET MARKED "INNOVATIONS—SUPERINTENDENTS' AND PRINCIPALS' FORM."

Appendix B
Influence

PLEASE MARK ALL ANSWERS ON ANSWER SHEET

SECTION VI--INFLUENCE

In general how much influence do you think the following groups or persons now have in determining educational matters (e.g., curriculum, policy, etc.) in your school? Please indicate how much influence each person or group has by marking the appropriate number on your answer sheet.

	None	A little	Some	Considerable	A great deal
85. The local school board	0	1	2	3	4
86. Your superintendent	0	1	2	3	4
87. The principal of your school	0	1	2	3	4
88. Teachers in general	0	1	2	3	4
89. Curriculum personnel (Supervisor, Director, or Coordinator)	0	1	2	3	4
90. Teacher organizations	0	1	2	3	4
91. Community; Individuals or groups	0	1	2	3	4
92. Research and Development Centers (National)	0	1	2	3	4
93. Upper Mid-West Regional Laboratory	0	1	2	3	4
94. Research and Development Center (Madison)	0	1	2	3	4

CENTRAL OFFICE STAFF SKIP TO SECTION VIII--REACTIONS TO PLANNED CHANGE STAFF.

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